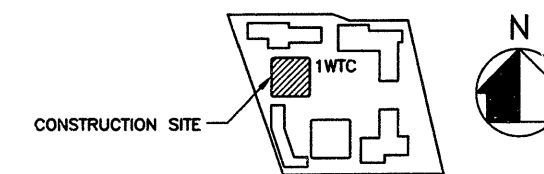


THE PORT AUTHORITY
OF NY & NJ
ENGINEERING PROGRAM MANAGER
WORLD TRADE CENTER
CHIEF ELECTRICAL ENGINEER
NOTES:

- FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE DWG. E-1. FOR INSTALLATION DETAILS, SEE DWG. E-2. FOR WIRING DIAGRAMS, SEE DWG. E-3.
- DISCONNECTION OF EXISTING SPEAKER CIRCUIT AND CONNECTION OF INSTALLED SPEAKER CIRCUIT AT THE TSC AND/OR THE EXISTING SPEAKER SHALL BE MADE AFTER INSTALLED SPEAKER WIRING IS TESTED AND OPERATIONAL. THIS WORK SHALL BE DONE IN THE PRESENCE OF THE ENGINEER.
- DISCONNECTION AND REMOVAL OF EXISTING TENANT AMPLIFIER AND ASSOCIATED CONDUIT AND WIRING UP TO THIS SPEAKER SHALL BE MADE AFTER INSTALLED SPEAKERS ARE TESTED AND OPERATIONAL. THIS WORK SHALL BE DONE IN THE PRESENCE OF THE ENGINEER.
- CONTRACTOR SHALL REMOVE EXISTING SPEAKERS ONLY AFTER INSTALLED DEVICES ARE OPERATIONAL.
- FOR REMOVAL AND PATCHING PLAN DETAILS (P-1, P-2, P-3 & P-4), SEE DWG. A-1.
- ALL REMOVED SPEAKERS SHALL BE RETURNED TO THE ENGINEER.
- ALIGN CENTER LINES OF SPEAKERS (ON WHICH WORK IS TO BE DONE IN THE CORRIDORS) TO THE CENTER LINE OF THE CORRIDOR. IN CASE OF CONFLICT WITH EXISTING CEILING LIGHTING AND GRILLS, FINAL LOCATION OF SPEAKERS SHALL BE ADJUSTED WITH THE APPROVAL OF THE ENGINEER.
- SINCE FIRE ALARM CIRCUIT LENGTH IS CRITICAL, ROUTING AND INSTALLATION OF ALL FIRE ALARM CIRCUITS SHALL BE AS SHOWN ON DRAWING.
- COORDINATE REMOVAL OF ALL SPEAKERS WITH ENGINEER. DISCONNECT AND ABANDON EXISTING SPEAKER CIRCUITS IN CEILING. TAPE ENDS OF ABANDONED CONDUCTORS AND TAG AS ABANDONED. THIS WORK SHALL BE DONE IN THE PRESENCE OF THE ENGINEER.
- REPLACE EXISTING SPEAKER WITH THE SHOWN WATTAGE RATED SPEAKER, AND REWIRE AS SHOWN. EXISTING BACKBOX CAN BE UTILIZED IF IT IS SIMILAR TO THE TYPICAL SPEAKER BOX. SEE INSTALLATION DETAIL "A" ON DWG. E-2.

SPEAKER CIRCUIT/LOADING TABLE

SPEAKER TAP/DB SETTING	Watts	1/8	1/4	1/2	1	2	4	TOTAL POWER (Watts)	CIRCUIT LENGTH (ft.)
SPK-A	6	3	5	0				4,000	570
SPK-B	5	1	7	2				6,375	834
SPK-C	2	2	4	3				5,750	545
SPK-D	3	1	5	2				5,125	587
GRAND TOTAL								21,250	2536


KEY PLAN

0 12 24
SCALE IN FEET

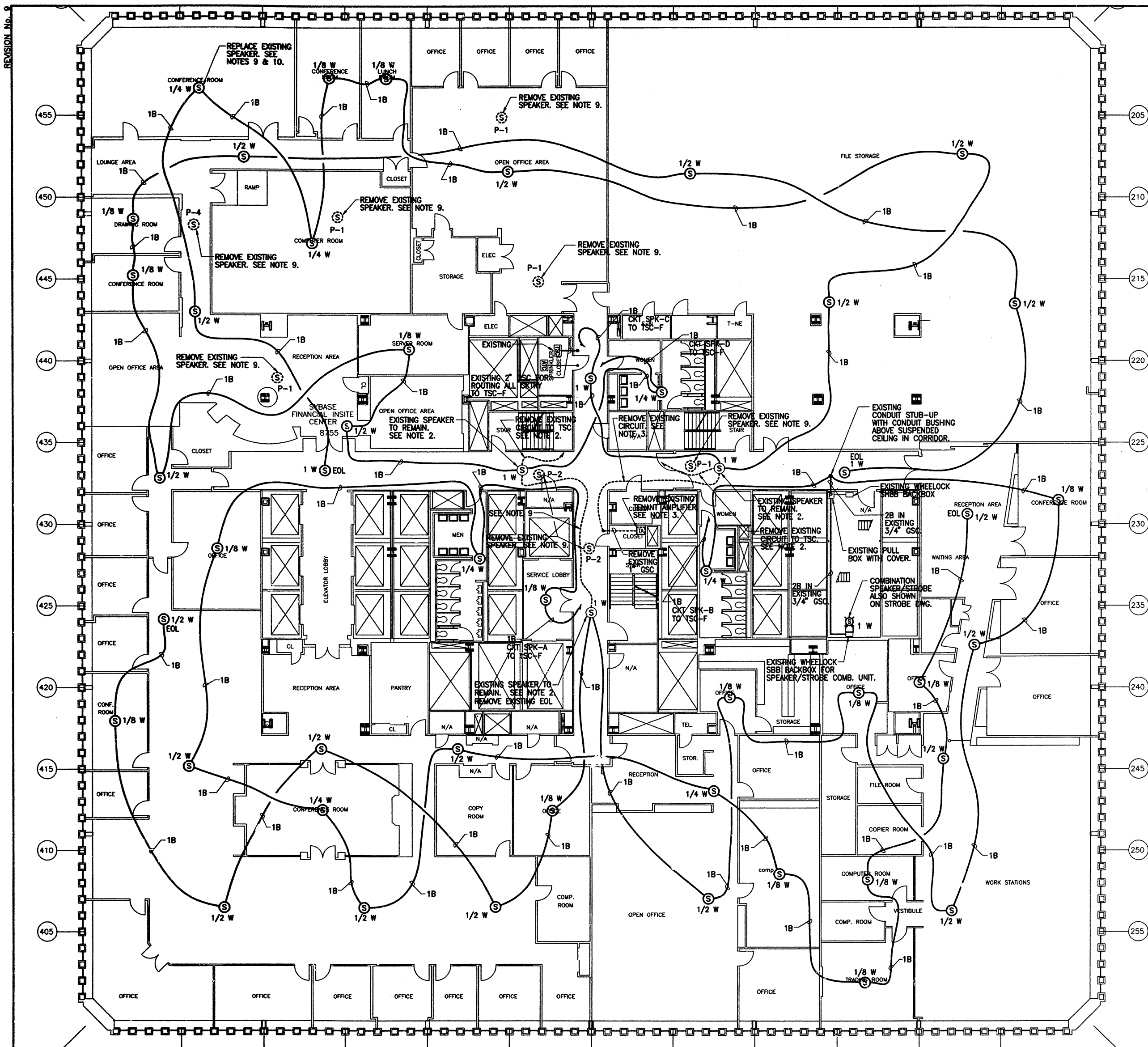
ELECTRICAL

Title
**FIRE ALARM SYSTEM
DEVICE UPGRADE
PHASE III
1 WORLD TRADE CENTER
CONTRACT NO. 3**
**87th FLOOR
SPEAKER
INSTALLATION AND
REMOVAL PLAN**

This drawing subject to conditions in Contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

S. FELDSTEIN N. APOSTLE A.S.
Designed by Drawn by Checked by

AUGUST 9, 1999
Date

WTC-861.176 E-087-2
Contract Number Drawing Number


FILE NAME: Y:\Wtc-861.176\176E-087-2R0.dwg plotted on 7/21/1999 by ROUKESHIRE